

CLAIMS

We claim:

1. A device for making electrical contact with at least one tension member in a load bearing member used in an elevator system, comprising:
 - 5 a clamping member that is received on at least one side of the load bearing member;
at least one electrical connector member supported by the clamping member and adapted to penetrate through a coating over the one tension member into a position to make electrically conductive contact with the tension member; and
 - 10 circuitry supported by the clamping member that is capable of processing information gathered from the connector member.
2. The device of claim 1, wherein the clamping member has first and second portions that are received on opposite sides of the belt, movement of at least
15 one portion being operative to urge the connector member into contact with the tension member.
3. The device of claim 2, including an adjustor that causes movement of one portion toward the other portion.
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4. The device of claim 3, wherein the adjustor is threaded and rotatable relative to the clamping member to cause relative movement between the first and second portions.
- 25 5. The device of claim 4, wherein at least one of the first or second portions has a threaded receiver that cooperates with the threaded adjustor.
6. The device of claim 1, including a housing supported by the clamping member and at least one electronic component within the housing that is coupled with
30 the connector member.

7. The device of claim 6, including a printed circuit board within the housing having the circuitry and the electronic component supported on the board.

8. The device of claim 1, wherein the electrical connector member has an engaging surface that is adapted to penetrate at least partially through a coating over the tension member to thereby make the electrically conductive contact.

9. The device of claim 1, including a plurality of electrical connectors adapted to make contact with a corresponding plurality of tension members.

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10. The device of claim 9, wherein the plurality of connectors is greater than the plurality of tension members and more than one connector is adapted to contact each tension member.

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11. The device of claim 1, including at least one shorting conductor that electrically connects at least one tension member to at least one other tension member to establish a continuous, electrically conductive path along corresponding tension members.

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12. The device of claim 11, wherein the connector members are coupled to establish a continuous conductive path along all of the tension members.

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13. The device of claim 11, wherein the shorting conductor is supported near an opposite end of the load bearing member from the electrical connector member.

14. A method of establishing an electrically conductive contact with at least one tension member in a load bearing member used in an elevator system, comprising:

5 providing a connector having at least one electrical connector member supported by a clamping member that also supports circuitry for processing information gathered from the electrical connector member;

placing the at least one conductive connector member adjacent a coating over the tension member; and

10 forcing the connector member at least partially through the coating sufficient to make an electrically conductive contact between the connector member and the tension member.

15 15. The method of claim 14, wherein the load bearing member has a plurality of tension members and including forcing at least one connector member into conductive contact with each of the tension members.

16. The method of claim 15, including forcing at least a terminal end of the connector member at least partially into the tension member.

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17. The method of claim 14, including positioning the clamping member adjacent the load bearing member and forcing the clamping member and the connector member toward a center of the load bearing member.

25 18. The method of claim 17, including positioning a portion of the clamping member on each side of the load bearing member and forcing the portions toward to each other.

30 19. The method of claim 14, including shorting at least one tension member to at least one other tension member.

20. An elevator load bearing assembly, comprising:
a plurality of electrically conductive tension members;
a non-conductive coating over the tension members;
5 at least one electrical connector member extending at least partially through the coating over the tension member such that the electrical connector member makes electrically conductive contact with at least one of the tension members;
a clamping member received on at least one side of the coating, the clamping member supporting the electrical connector member such that the connector member
10 remains in electrically conductive contact with the tension member; and
circuitry supported by the clamping member for processing information gathered from the connector member.

21. The assembly of claim 20, wherein the clamping member has a first
15 portion received on a first side of the coating and a second portion received on a second side of the coating and including an adjuster that adjusts the relative position between the first and second clamping member portions for adjusting a position of the connector member relative to the tension member.

22. The assembly of claim 20, including a plurality of connector members,
20 at least one connector member making electrically conductive contact with each of the tension members.

23. The assembly of claim 20, including at least one shorting conductor for
25 electrically coupling at least two of the tension members.

AMENDED CLAIMS
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1. A device for making electrical contact with at least one tension member in a load bearing member used in an elevator system, comprising:

5 a clamping member that is received on at least one side of the load bearing member;

at least one electrical connector member supported by the clamping member and adapted to penetrate through a coating over the one tension member into a position to make electrically conductive contact with the tension member; and

10 circuitry supported by the clamping member that is capable of processing information gathered from the connector member.

2. The device of claim 1, wherein the clamping member has first and second portions that are received on opposite sides of the load bearing member, movement of at least one portion being operative to urge the connector member into contact with the tension member.

3. The device of claim 2, including an adjustor that causes movement of one portion toward the other portion.

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4. The device of claim 3, wherein the adjustor is threaded and rotatable relative to the clamping member to cause relative movement between the first and second portions.

25 5. The device of claim 4, wherein at least one of the first or second portions has a threaded receiver that cooperates with the threaded adjustor.

30 6. The device of claim 1, including a housing supported by the clamping member and at least one electronic component within the housing that is coupled with the connector member.

7. The device of claim 6, including a printed circuit board within the housing having the circuitry and the electronic component supported on the board.

8. The device of claim 1, wherein the electrical connector member has an engaging surface that is adapted to penetrate at least partially through a coating over the tension member to thereby make the electrically conductive contact.

9. The device of claim 1, including a plurality of electrical connectors adapted to make contact with a corresponding plurality of tension members.

10. The device of claim 9, wherein the plurality of connectors is greater than the plurality of tension members and more than one connector is adapted to contact each tension member.

11. The device of claim 1, including at least one shorting conductor that electrically connects at least one tension member to at least one other tension member to establish a continuous, electrically conductive path along corresponding tension members.

12. The device of claim 11, wherein the connector members are coupled to establish a continuous conductive path along all of the tension members.

13. The device of claim 11, wherein the shorting conductor is supported near an opposite end of the load bearing member from the electrical connector member.

14. A method of establishing an electrically conductive contact with at least one tension member in a load bearing member used in an elevator system, comprising:

5 providing a connector having at least one electrical connector member supported by a clamping member that also supports circuitry for processing information gathered from the electrical connector member;

placing the at least one conductive connector member adjacent a coating over the tension member; and

10 forcing the connector member at least partially through the coating sufficient to make an electrically conductive contact between the connector member and the tension member.

15 15. The method of claim 14, wherein the load bearing member has a plurality of tension members and including forcing at least one connector member into conductive contact with each of the tension members.

16. The method of claim 15, including forcing at least a terminal end of the connector member at least partially into the tension member.

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17. The method of claim 14, including positioning the clamping member adjacent the load bearing member and forcing the clamping member and the connector member toward a center of the load bearing member.

25 18. The method of claim 17, including positioning a portion of the clamping member on each side of the load bearing member and forcing the portions toward to each other.

30 19. The method of claim 14, including shorting at least one tension member to at least one other tension member.

20. An elevator load bearing assembly, comprising:
a plurality of electrically conductive tension members;
a non-conductive coating over the tension members;
5 at least one electrical connector member extending at least partially through
the coating over the tension member such that the electrical connector member makes
electrically conductive contact with at least one of the tension members;
a clamping member received on at least one side of the coating, the clamping
member supporting the electrical connector member such that the connector member
10 remains in electrically conductive contact with the tension member; and
circuitry supported by the clamping member for processing information
gathered from the connector member.

21. The assembly of claim 20, wherein the clamping member has a first
15 portion received on a first side of the coating and a second portion received on a
second side of the coating and including an adjuster that adjusts the relative position
between the first and second clamping member portions for adjusting a position of the
connector member relative to the tension member.

22. The assembly of claim 20, including a plurality of connector members,
20 at least one connector member making electrically conductive contact with each of the
tension members.

23. The assembly of claim 20, including at least one shorting conductor for
25 electrically coupling at least two of the tension members.